UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,160	12/05/2000	Juha Tuomainen	460-009986-US(PAR)	6860

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EXAMINER
WILSON, ROBERT W

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/730,160	TUOMAINEN ET AL.
		Examiner	Art Unit	
		Robert W Wilson	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,12-14,19 and 20* is/are rejected.

7)☒ Claim(s) *5,8-11 and 15-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

1.0 The application of Tuomainen et. al. entitled "METHOD FOR REDUCING THE POWER CONSUMPTION OF A MOBILE STATION" with foreign priority based upon FINLAND 1999992635 dated 12/8/1999 and amended on 8/25/04 was examined. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

2.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6-7, 12-14 & 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanchara et. al. (U.S. Patent No.; 6,108,542) in view of Mazur et. al. (U.S. Patent No: 6,463,054) further in view of Takayama (U.S. Patent No.: 6,119,024)

Referring to **Claim 1**, Swanchara et. al. (U.S. Patent No.; 6,108,542) teaches: A method for reducing the power consumption of a mobile station connected to a packet switched network (Fig 1 or Fig 2 or col. 9 line 54 shows a mobile which reduces power consumption per col. 10 lines 6-17 by going into idle mode in a GSM/AMPS network per col. 1 lines 30-53) in which the packet-switched network information is transmitted in the form of data frames (GSM network per col.1 line 31)

Specifying a paging period for a mobile (A predetermined time period is utilized for scanning the paging or control channel while in standby mode per Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28)

Sending paging messages essentially at intervals of said paging period to the mobile station to enable to synchronize the mobile station with the packet-switched network (The base send pages during a predetermined time period over control channel to the mobile so that the mobile can sync with the GSM/AMPS system per Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28)

Setting the mobile station in the standby mode at least for the time of reception of the paging message (The mobile station is in standby mode for the predetermined period for receiving the paging messages per col. Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28) and after the reception of the paging message;

Setting the mobile station, which is in the standby mode, to the idle mode, in which idle mode part of the functions of the mobile station are set in one of the following states (The mobile transitions from standby to idle mode for a determined time period referred to as a free time per Abstract or per col. 9 line 54-col. 10 line 17)

Power saving mode (reduce power consumption per col. 10 line 15);
Switched off (reduce power consumption per col. 10 line 15)

Wherein the method further comprises changing the mode of operation of the mobile station from the idle mode to the standby mode (The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17) according to the following alternatives:

At intervals during the paging period to receive information transmitted to the packet-switched network for maintaining synchronization to the packet switched network or the end the paging period for resynchronizing the mobile station to the packet switched network (The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17)

Swanchara et. al. (U.S. Patent No.; 6,108,542) does not expressly call for: synchronizing with a packet switched network or sending packets or specifying a time period for paging but teaches a synchronizing with a GSM/AMPs networks per col. 1 lines 30-53

Mazur teaches: synchronizing with a packet switched network (The MS receives a incoming page and switches to receive a set or call for a packet network per col. 6 line lines 16-40) and sending packets packet data transfer to GPRS system per col. 1 lines 30-53.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the packet switching capability of Mazur to the GSM/AMPs network of Swanchara because the processing Mazur applies to a combined AMPs/GSM system per Abstract or per col. 1 line 14-col. 2 line 27.

The combination of Swanchara and Mazur do not teach: specifying a period for paging but teaches reducing power.

Takayama teaches" specifying a paging period (The mobile specifies a paging band which most matches the desired paging period per Abstract or per col.1 line 5-col. 3 line 15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the selection of paging period of Takayama to the combination of Swanchara and Mazur in order to reduce power conception.

In Addition Takayama teaches:

Regarding **Claim 2**, comprising defining at least two different paging periods, and performing selection of the paging period for the idle mode of the mobile station (Abstract or per col.1 line 5-col. 3 line 15.)

Regarding **Claim 3**, the selection of the paging period on the basis of the received signal strength (Swanchara teaches selection of a band based upon time period per col. 17 line 60-col. 18 line 2. Takayama teaches selection of a paging band signal strength per Abstract or per col. 1 line 5-col. 3 line 15. It would have been obvious to one of ordinary skill in the art at the time of the invention to select a paging period on the basis of received signal strength in order to get a better estimate of signal strength.)

Regarding **Claim 4**, the selection of the paging period on the basis of running average of received signal strength (Swanchara teaches selection of a band based upon time period per col. 17 line 60-col. 18 line 2. Takayama teaches selection of a paging band based upon average signal strength per Abstract or per col. 1 line 5-col. 3 line 15. It would have been obvious to one of ordinary skill in the art at the time of the invention to select a paging period on the basis of received average signal strength in get a better estimate of signal strength)

Regarding **Claim 6**, further comprising defining selection of the paging period by the user of the mobile terminal (Abstract or per col. 1 line 5-col. 3 line 15.)

Regarding **Claim 7**, further comprising controlling idle mode the timing functions of the mobile by using a first oscillator, wherein the time for changing from the idle to standby mode is affected at least partly by the frequency stability of the first oscillator (The examiner takes official notice that having a master clock or first oscillator and changing to a low precision clock is well known in the art per col. 15 line 59-col. 16 line 7 of U.S. Patent No.: 6,680,920 is well known in the art. It would have been obvious to utilize Master clock or oscillator and low precision clock in order to save power when going from standby to idle mode)

In Addition Mazur teaches:

Regarding **Claim 12**, using a GPRS packet switched network as the packet-switched network (col. 1 lines 14-67)

Referring to **Claim 13**, Swanchara et. al. (U.S. Patent No.; 6,108,542) teaches: A system (Figs 1 & 2) which comprises a packet-switched network (AMPs/GSM network per col. 1 lines 30-53)

At least one mobile station having a data transfer connection with the packet-switched network (Figs 1 & 2 to the AMPs/GSM network or per col. 1 lines 30-53)

Means for sending information in the form of data frames between the mobile station and the packet switched network (The base station receives the data for the AMPs/GSM network per Fig 1 & 2 or means for sending)

Means for specifying the paging period, whereby paging messages are arranged to be sent essentially at the intervals of said paging period to the mobile station to enable synchronize the mobile station with the packet switched network (The applicant broadly claims "means for specifying a paging period". The mobile knows the time period that it must utilize for scanning for paging messages per Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28 or means for specifying a paging period)

Means for setting the mobile station to the standby mode at least for the time of the reception of paging messages (The mobile knows the time period that it must utilize for scanning for paging messages while in standby mode per Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28 or means)

Means for setting some of the functions of the mobile station in the idle mode (The mobile utilizes a time period or free time period while in idle mode per col. 9 line 54-col. 10 line 17 or means) to one of the following states:

Power saving mode (idle/reduced power consumption per col. 10 line 1-17)

Switched off (idle/reduced power consumption per col. 10 line 1-17)

Means for changing the mode of operation of the mobile station, which is in the idel mode, from the idle mode to the standby mode (The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17)

Wherein the means for changing the mode of operation of the mobile station are adapted to change the mode of the operation according to any of the following alternatives (The mobile transitions from standby to idle mode for a determined time period referred to as a free time per Abstract or per col. 9 line 54-col. 10 line 17 in order to reduce power consumption per col. 10 line 15. The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17):

At intervals during the paging period to receive information transmitted tin the packet-switched network (The mobile transitions from standby to idle mode for a determined time period referred to as a free time per Abstract or per col. 9 line 54-col. 10 line 17 in order to reduce power consumption per col. 10 line 15. The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17 in the GSM/AMPS network)

Or at the end of the paging period to the receive information transmitted in the packet-switched network for performing a resynchronization to the packet switched network (The mobile transitions from standby to idle mode for a determined time period referred to as a free time per Abstract or per col. 9 line 54-col. 10 line 17 in order to reduce power consumption per col. 10 line 15. The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17 in the GSM/AMPS network)

Swanchara et. al. (U.S. Patent No.; 6,108,542) does not expressly call for: packet switched
network, data transfer connection to a packet switched network, sending data frames between the
mobile station and the packet switched network, or specifying a paging period but teaches a
synchronizing with a GSM/AMPs networks per col. 1 lines 30-53

Mazur teaches: packet switched network (col. 6 line lines 16-40 or per col. 1 lines 30-53)

data transfer connection to a packet switched network (col. 6 line lines 16-40 or per col. 1 lines
30-53), sending data frames between the mobile station and the packet switched network (col. 6
line lines 16-40 or per col. 1 lines 30-53)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add
the packet switching capability of Mazur to the GSM/AMPs network of Swanchara because the
processing Mazur applies to a combined AMPs/GSM system per Abstract or per col. 1 line 14-
col. 2 line 27.

The combination of Swanchara and Mazur do not teach: specifying a period for paging but
teaches reducing power.

Takayama teaches" specifying a paging period (The mobile specifies a paging band which most
matches the desired paging period per col.1 line 5-col. 3 line 15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add
the selection of paging period of Takayama to the combination of Swanchara and Mazur in order
to reduce power conception.

In Addition Mazur teaches:

Regarding **Claim 14,** comprising a mobile station comprises a first oscillator for controlling the
timing functions of the mobile station in the idle mode, whereby the time changing from the idle
mode to the standby mode is affected at least partly by the frequency stability of the first
oscillator (The examiner takes official notice that having a master clock or first oscillator and
changing to a low precision clock is well known in the art per col. 15 line 59-col. 16 line 7 of
U.S. Patent No.: 6,680,920 is well known in the art. It would have been obvious to utilize
Master clock or oscillator and low precision clock in order to save power when going from
standby to idle mode)

Regarding **Claim 19,** using a GPRS packet switched network as the packet-switched network
(col. 1 lines 14-67)

Referring to **Claim 20,** Swanchara et. al. (U.S. Patent No.; 6,108,542) teaches: A mobile station
(Fig 1 or Fig 2 or col. 9 line 54 shows a mobile which reduces power consumption per col. 10
lines 6-17 by going into idle mode in a GSM/AMPS network per col. 1 lines 30-53)

Means for establishing a data transfer connect to the packet-switched network (Ability to transfer data to a GSM/AMPs network per Figs 1 or 2)

Means for specifying the paging period (The applicant broadly claims "means for specifying a paging period". The mobile has the ability to scan for pages during a predetermined time period or paging period per Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28 or means for specifying a paging period)

A receiver for receiving paging messages which are sent essentially at the intervals of said paging period from the packet-switched network to the mobile station to enable to synchronize the mobile station with the packet-switched network (The mobile receives paging messages in order to synchronize with the GSM/AMP system per Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28)

Means for setting the mobile station to the standby mode at least for the time of the reception of the paging messages (The mobile station is in standby mode for the predetermined period for receiving the paging messages per col. Abstract or per col. 3 line 10-col. 4 line 5 or per col. 5 line 65-col. 6 line 28 or means)

Means for setting the mobile station, which is in the standby mode, to the idle after the reception of the paging message (The mobile transitions from standby to idle mode for a determined time period referred to as a free time per Abstract or per col. 9 line 54-col. 10 line 17 in order to reduce power consumption per col. 10 line 15. The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17 in the GSM/AMPS network)

Means for setting some for the functions of the mobile station in the idle mode to one of the following states:

The power saving mode (reduce power consumption per col. 10 line 15);
Switched off (reduce power consumption per col. 10 line 15)

Wherein the means for changing the mode of operation of a mobile station are adapted to change the mode of operation according to one of the following alternatives:

At intervals during the paging period to receive information transmitted in the packet-switched network for maintaining synchronization into the packet switched network when the mobile station is synchronized to the packet switched network (The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17)

Or at the end of the paging period to receive information transmitted in the packet-switched network for performing synchronization to the packet-switched network again when the mobile station is not synchronized to the packet–switched network (The mobile changes back to standby mode as soon as the determined time period is over per Abstract or per col. 9 line 54-col. 10 line 17)

Swanchara et. al. (U.S. Patent No.; 6,108,542) does not expressly call for: synchronizing with a packet switched network or sending packets, or specifying a paging period but teaches a synchronizing with a GSM/AMPs networks per col. 1 lines 30-53

Mazur teaches: synchronizing with a packet switched network (col. 6 line lines 16-40 & col. 1 lines 30-53 and sending packets packet data transfer to GPRS system (col. 6 line lines 16-40 & col. 1)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the packet switching capability of Mazur to the GSM/AMPs network of Swanchara because the processing Mazur applies to a combined AMPs/GSM system per Abstract or per col. 1 line 14-col. 2 line 27.

The combination of Swanchara and Mazur do not teach: specifying a period for paging but teaches reducing power.

Takayama teaches" specifying a paging period (The mobile specifies a paging band which most matches the desired paging period per col.1 line 5-col. 3 line 15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the selection of paging period of Takayama to the combination of Swanchara and Mazur in order to reduce power conception.

Claim Objections

3.0   Claims 5, 7-11, & 15-18 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

The closest prior art is Swanchara et. al. (U.S. Patent No.; 6,108,542) in view of Mazur et. al. (U.S. Patent No: 6,463,054) further in view of Takayama (U.S. Patent No.: 6,119,024). The closest prior art fails to anticipate or disclose the following claim limitations:

"increasing the paging period if the comparison indicates that the difference between the representation of the received signal and all of said one or more previously calculated

representations of the received signal lies within said first threshold value, and if current paging period is shorter than said maximum paging period, decreasing the paging period, if the comparison indicates that the difference between the representation of the received signal and any of said one or more previously calculated representations of the received signal is greater than said first threshold value and if the current paging period is longer than said minimum paging period" as claimed in Claim 5.

"examining the result of the comparison to determine if the synchronization period is at least as long as the time before the next time of reception of a paging message, where the method comprises setting the idle mode to end essentially immediately before the time of the reception of the next paging message, or if the synchronization period is shorter than the time before the time of the reception of the next paging message, wherein the method comprises setting the idle mode end before the specified synchronization time has expired, performing the synchronization, and repeating said setting, specifying, comparing and examining, and repeating at least said receiving, setting , specifying, comparing and examining in connection with the reception of each paging message" as claimed in Claim 8

"if the synchronization period is shorter than the time before the time of the reception of the next paging message, wherein the idle mode has been set to end before the specified synchronization time has expired, the system is adapted to perform the synchronization and to set the mobile station to the idle mode after the synchronization" as claimed in Claim 15.

In Addition:

Claims 9-11 depend upon **Claim 8.**

Claims 16-18 depend upon **Claim 15.**

Response to Amendment

4.0   Applicant's arguments with respect to claims 1-20 have been considered but are moot in

view of the new ground(s) of rejection.

The examiner respectively disagrees with the applicant argument that the previous reference need to discloses that the "mobile station interrupts the idle mode to receive information transmitted in the network during the paging period and using the received information for synchronization purposes only (I.E. training period is received and used for correcting timing errors in the oscillator because these are not claim limitations specified in the claims.

The examiner respectively disagrees with the applicant argument that the new reference disclose a idle and standby mode. Please refer to above rejection for details.

5.0   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Conclusion

6.0   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Robert W Wilson whose telephone number is

571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kenneth Vanderpuye can be reached on 571/272-3078. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert W Wilson
Examiner
Art Unit 2661

RWW
December 9, 2004

KENNETH VANDERPUYE
PRIMARY EXAMINER